

REMARKS

By this amendment, claims 1 and 9 have been canceled and new claims 17 and 18 have been presented for examination. Therefore, on entering this amendment, claims 2-8, 10 - 18 are all the claims pending in the application.

Claims 1-14 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Claims 9-13 are rejected under 35 U.S.C. § 102(b) as being fully anticipated by Davis, et al. (U.S. Patent No. 5,822,092).

Claims 9-13 are rejected under 35 U.S.C. § 102(b) as being fully anticipated by Redman, et al. (U.S. Patent No. 3,598,484).

Claims 15-16 are rejected under 35 U.S.C. § 102(b) as being fully anticipated by Nishikawa, et al. (JP 11-024538).

Claims 9-16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Takabayashi, et al. (EP 1045296) in view of Nishikawa, et al. '538.

Claims 1-16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Takabayashi, et al. '296, in view of Nishikawa, et al. '538, further in view of Ueda, et al. (U.S. Patent No. 6,340,540).

The Applicants traverse the rejections and request reconsideration.

Rejections based on section 112

Claims 1 and 9 have been canceled and new claims 17 and 18 have been presented for examination. These new claims are believed to be bereft of the section 112 issues noted in the outstanding Office Action.

Rejection based on prior art

New independent claims 17 and 18 have been presented for examination. The present invention, as recited in new claims 17 and 18 are believed to be novel and non-obvious over the cited references.

In the present invention, there is provided a volume hologram by the combination of a three-dimensional subject image and a plane pattern image recorded by the reference lights of the same wavelength and the same incident angle. Although the reproduced image of the volume hologram is recorded by the same wavelength, the three-dimensional subject image and the plane pattern image are observed in different colors.

The three-dimensional subject image and the plane pattern image are respectively reproduced from the hologram (29') recorded in the hologram recording material (29) in which the hologram (11') recording the three-dimensional subject and the hologram (21') recording the plane pattern are recorded by the reference light (27) of the same wavelength and the same incident angle, but the reproduction angle is different. The present invention features that the reproduction angles of the three-dimensional subject image and the plane pattern image are different, so they are observed in the different colors.

Further, when one-dimensional diffusion is performed in the normal line direction of the plane, the section's state of the hologram interference fringe is substantially the same as the

mirror which does not diffuse. Conversely, when a one-dimensional diffusion in a parallel direction (the plane formed by the incident angle and the diffraction angle) of the plane, if it is deviated from the Bragg angle with respect to the incident angle, it becomes dark like the three-dimensional image, and the effect of changing the color is hardly obtained.

To illustrate the support for the new claims, the limitations of claim 17 are listed below annotated with corresponding item numbers in the Figures. It should be noted that these annotations represent only examples and should not be construed to limit the scope of the claims.

three dimensional object (O)

a first input hologram (11')

a light from a plain pattern image arising from a second input hologram (29')

an illumination light (27)

a first image (O')

a transmission hologram (1')

a first coherent reference light (4)

a second coherent reference light (3)

a scattered light (2)

the second input hologram (21')

a masked pattern (22)

third coherent reference light (25)

diffuser (24)

AMENDMENT UNDER 37 C.F.R. § 1.114(c)
U.S. Patent Application No.: 10/615,399

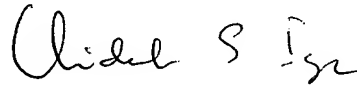
Attorney Docket No.: Q76476

The Applicants further submit that the subject matter is further supported at least on pp. 8-12 of the Specification.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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